

299-W22-87 (C4977) Log Data Report

Borehole Information:

Borehole: 299-W22-87 (C4977)			Site: 216-U12 Crib		
Coordinates (WA St Plane)		GWL¹ (ft): 85.25*	GWL Date: 12/28/05		
North Not available	East Not available	Drill Date 12/02/05	Ground Level Elevation Not available	Total Depth (ft) 375	Type Becker

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel	2.75	6.24	6.0	0.12	1.75	375
Steel	N/A	9.0	8.0	0.50	N/A	375

Borehole Notes:

This borehole is located approximately 32 ft east of 299-W22-43.

The Becker drilling system uses a dual-wall casing. Air is forced down the annulus and cuttings are returned inside the inner casing. Total wall thickness is 0.620 in., increasing to 1.115 in. at the casing joints that occur at 10-ft intervals. The casing dimensions are derived from published values for Becker drill casing. Logging data acquisition is referenced to the ground surface. Heaving sand is reported in the borehole below 336 ft.

*The Fluor PIC reported the driller's added water to the borehole during drilling operations and that static water level is about 250 ft.

Logging Equipment Information:

Logging System: Gamma 4N		Type: SGLS (60%) SN: 45TP22010A
Effective Calibration Date: 08/16/05	Calibration Reference: DOE/EM-GJ953-2005	
Logging Procedure: MAC-HGLP 1.6.5, Rev. 0		

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2	3 Repeat		
Date	12/28/05	12/28/05	12/28/05		
Logging Engineer	Spatz	Spatz	Spatz		
Start Depth (ft)	336.0'	241.0'	30.0'		
Finish Depth (ft)	240.0'	1.0'	13.0'		
Count Time (sec)	NA	NA	NA		

Log Run	1	2	3 Repeat		
Live/Real	R	R	R		
Shield (Y/N)	NA	NA	NA		
Sample interval (ft)	1.0 ft	1.0 ft	1.0 ft		
ft/min	1.0 ft	1.0 ft	1.0 ft		
Pre-Verification	DN021CAB	DN021CAB	DN021CAB		
Start File	DN021000	DN021097	DN021338		
Finish File	DN021096	DN021337	DN021355		
Post-Verification	DN021CAA	DN021CAA	DN021CAA		
Depth Return Error (in.)	NA	Low 1.0	0.0		
Comments	Fine gain adjustment made at bottom of borehole and after file 009.	Cable wrap adjustment made. No fine gain adjustment made.	Repeat section.		

Logging Operation Notes:

Pre- and post-survey verification measurements were acquired in the Amersham verifier, SN 115. The back of the logging truck was set-up facing south. A centralizer was installed on the sonde. Maximum logging depth achieved was 336.36 ft before the sonde un-weighted.

Analysis Notes:

Analyst:	McCain	Date:	06/12/06	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Verification spectra for the logging system were collected before and after data acquisition. Acceptance criteria were met, with the exception of net cps for the 609 keV gamma line in the pre-run spectrum. The net count rate was 17.27 cps, or about 1.5% above the UCL and about 5% above the mean. Examination of the spectrum indicates no anomalies, and the spectrum is provisionally accepted.

Casing thickness (additive for the 6- and 9-in. casings) is approximately 0.620 in. The combined thickness at casing joints is 1.115 in. This thickness results in a significant reduction in gamma activity detection as the detector passes by a casing joint. However, it is not practical to correct individual data points for the effect of casing joints. The influence of the thick joints is apparent on the total gamma where reduced count rates are exhibited at approximately 10-ft depth intervals.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to extract the total gamma count rate from individual files. No corrections are made for dead time, casing, or water.

Log Plot Notes:

Log plots are provided for the total gamma and dead time. A repeat log section is also presented.

Results and Interpretations:

A decrease in gamma activity occurs at each casing joint, where the increase in wall thickness results in greater attenuation of gamma activity. No anomalous gamma activity was observed. This observation suggests no significant concentrations of man-made radionuclides.

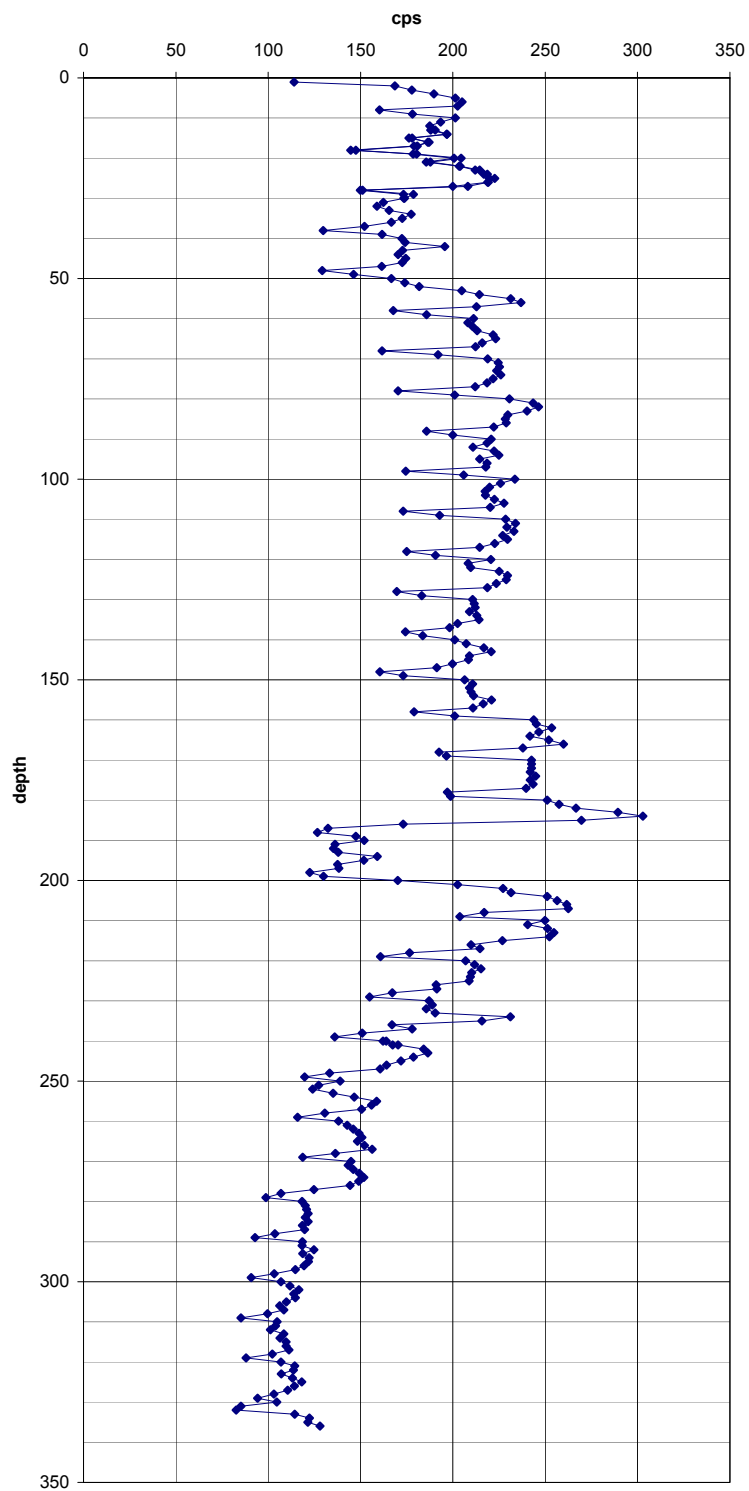
The repeat section indicated good agreement of the total count rate.

¹ GWL – groundwater level

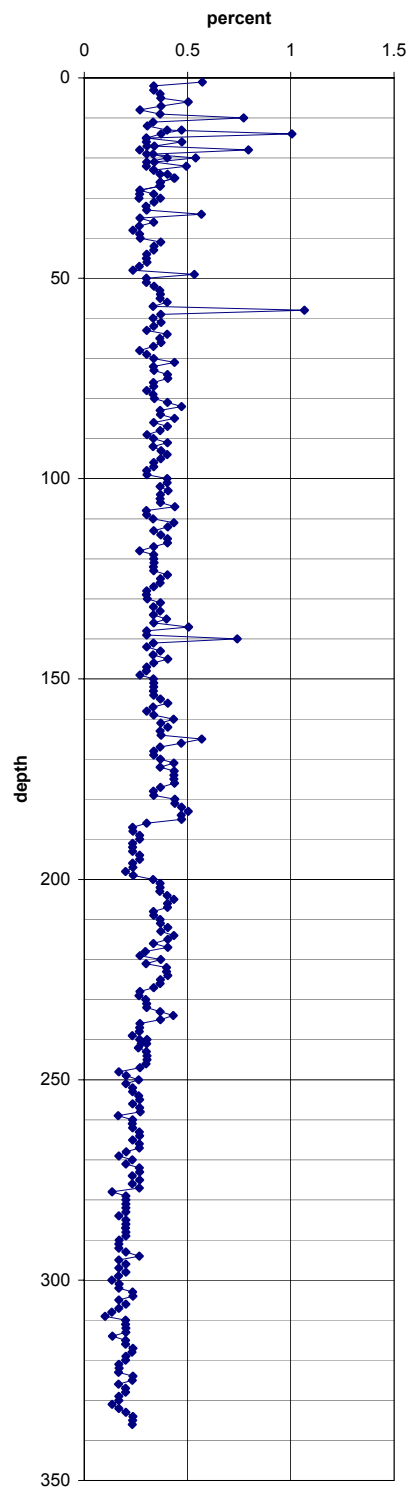
² N/A – not applicable

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Total Gamma



Dead Time



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Repeat Section

